

Title (en)

Digital to analog converter, delay-locked loop, memory device and counting method

Title (de)

Digital-Analog-Wandler, Verzögerungsregelschleife, Speichergerät und Zählverfahren

Title (fr)

Convertisseur numérique-analogique, boucle à verrouillage de retard, dispositif de mémoire et procédé de comptage

Publication

EP 1361661 A2 20031112 (EN)

Application

EP 03001762 A 20030128

Priority

KR 20020024738 A 20020506

Abstract (en)

A digital to analog converter (DAC) can comprise: an escalator code generator; and an escalator-code-to-analog converter (ECAC). The generator can (1) represent base 10 numbers with a mixed code having a coin code portion and a cash code portion, which will eliminate multi-bit changes in the cash code upon changes in count direction; and (2) represent a count in a first direction as the sum of the coin code and the cash code. The generator can alter the coin code when the count changes direction while the cash code remains the same until a count capacity of the coin code is exceeded, at which point the cash code can be altered. Cycling between adjacent base 10 numbers is absorbed by the coin code while keeping the cash code the same, which reduces noise introduced into an output of the ECAC due to such cycling. <IMAGE>

IPC 1-7

H03M 1/06; **H03L 7/081**; **G11C 7/22**

IPC 8 full level

G11C 7/16 (2006.01); **G11C 7/22** (2006.01); **H03L 7/081** (2006.01); **H03L 7/089** (2006.01); **H03M 1/06** (2006.01); **H03M 1/68** (2006.01); **H03M 7/00** (2006.01); **H03M 1/08** (2006.01); **H03M 1/66** (2006.01); **H03M 1/74** (2006.01)

CPC (source: EP KR US)

G11C 7/16 (2013.01 - EP US); **G11C 7/22** (2013.01 - EP US); **G11C 7/222** (2013.01 - EP US); **H03L 7/0816** (2013.01 - EP US); **H03L 7/089** (2013.01 - EP US); **H03M 1/0687** (2013.01 - EP US); **H03M 7/00** (2013.01 - KR); **H03M 1/0863** (2013.01 - EP US); **H03M 1/664** (2013.01 - EP US); **H03M 1/745** (2013.01 - EP US)

Designated contracting state (EPC)

DE FR GB IT

DOCDB simple family (publication)

EP 1361661 A2 20031112; **EP 1361661 A3 20040818**; **EP 1361661 B1 20060726**; CN 100474779 C 20090401; CN 1457149 A 20031119; DE 60306982 D1 20060907; DE 60306982 T2 20070329; JP 2004007635 A 20040108; JP 3911490 B2 20070509; KR 100454129 B1 20041026; KR 20030086644 A 20031112; US 2003206043 A1 20031106; US 2004196079 A1 20041007; US 6778114 B2 20040817; US 6847242 B2 20050125

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